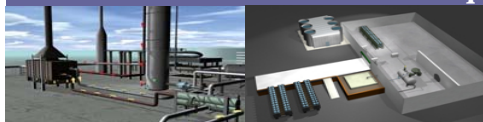


# Clean Air Act 112(r) Newsletter

Accident Release Prevention Requirements

Risk Management Programs



U.S. Environmental Protection Agency, Region 10

March-April 2006

## Look Inside

- EPA Penalizes Eight Northwest Facilities For Risk Management Violations
- EPA's Enforcement Authority for the Risk Management Program Regulations
- Facilities are required to comply with... The General Duty Clause of the RMP
- Safety Advisory: Chlorine Transfer Hose Failure
- CAA 112(r) Regulated Chemicals, Incidents & Lessons Learned

## EPA Penalizes Eight Northwest Facilities for Risk Management Violations

The Environmental Protection Agency (EPA) recently issued penalties to eight facilities in Washington, Oregon, Idaho and Alaska for federal Clean Air Act Risk Management Program violations. The penalties, ranging from \$2,000 and \$7,275, were levied against facilities that handle toxic and flammable chemicals.

The penalties were assessed under Section 112(r) of the federal Clean Air Act. Section 112(r) requires the development of Risk Management Plans (RMPs) for all public and private facilities that manufacture, process, use, store or otherwise handle flammable gases and toxic chemicals such as chlorine, propane, sulfur dioxide and formaldehyde. Facility RMPs are used by local emergency responders to protect the public from accidental releases of flammable gases and/or toxic chemicals.

Of the eight penalties issued, half were due to late re-filing of Risk Management Plans (RMPs) and half were for inadequate Risk Management Programs. All of these penalties were conducted under EPA's Expedited Settlement Agreement process. The EPA has the option to use the

## EPA's Enforcement Authority for the Risk Management Program Regulations

Under Section 113 of the CAA, the Agency has the authority to bring administrative and judicial actions against violators. Judicial actions can be civil and criminal in nature. Section 113(a)(3) authorizes the Agency to order violators to comply with the risk management program regulations. Under Section 113(b), the Agency may initiate civil judicial enforcement for violations of the Risk Management Program to assess penalties up to \$32,500 per day for each violation. Under Section 113(c), the Agency may seek criminal penalties for knowing violations of the risk management program. Under Section 113(d) the Agency may assess administrative civil penalties of up to \$32,500 per day for each violation. Administrative actions initiated under Section 113(d) cannot exceed \$270,000 unless approved by the Department of Justice. In addition to the authority to bring administrative and judicial actions against violators, the Agency may issue orders under CAA Section 112(r)(9) and CAA Section 303 when there is an imminent and substantial threat of an actual or potential release.

Expedited Settlement Agreement process for easily correctable violations.

The following facilities entered into settlement agreements with EPA between November 2005 and February 2006, and have corrected their violations:

*Trident Seafoods* (Sand Point, Akutan, and St. Paul), AK  
*Primeland Co-op*, Ferdinand, ID  
*Primeland Co-op*, Craigmont, ID  
*Headworks*, City of Astoria, OR  
*Waste Water Treatment Plant (WWTP)*, City of Astoria, OR  
*Wilco Farmers*, Stayton, OR  
*Chemtrade Performance Chemicals* - Kalama Plant, Kalama, WA  
*WWTP*, City of Spokane, WA.

### Did You Know?

**All facilities with toxic and flammable chemicals are required to comply with...**

## The General Duty Clause of the RMP

The *General Duty Clause* is one of the three major parts of the Risk Management Program of the Clean Air Act Section 112(r). The other major parts are the *list of hazardous chemicals* and the *requirements for facilities* that are covered by the law.

The *General Duty Clause* makes owners and operators of facilities that have extremely hazardous substances responsible for ensuring that their chemicals are managed safely. It applies to any stationary source producing, processing, handling, or storing regulated substances or other extremely hazardous substances, whether or not EPA has listed those substances. There is no minimum threshold. Facilities that have these substances are responsible for (1) knowing the hazards

posed by the chemicals and assessing the impacts of possible releases (2) following codes, standards and other business practices to ensure the facility is properly constructed and maintained, and that the chemical is managed safely, and (3) having a contingency planning process, which would involve community responders, if necessary, to aid in an adequate response in the event of an accident. Facilities have been required to comply with the *General Duty Clause* since November, 1990.

### General Duty Clause - Q & A's

These questions and answers can be used to explore the application of the regulations in different scenarios or to shed light on complex issues. The EPA may withdraw, modify, or depart from the answers provided at any time without notice. For an understanding of the actual regulatory requirements in any given situation, the reader must consult the appropriate sections of Title 40 of the Code of Federal Regulations (CFR), pertinent Federal Registers and EPA guidance documents.

**Question:** What is the general duty clause under CAA §112(r)(1)?

**Answer:** The CAA general duty clause directs owners and operators of stationary sources to identify hazards that may result from accidental releases, to design and maintain a safe facility, and to minimize the consequences of releases when they occur. (CAA Q&A Database).

**Question:** For CAA section 112(r)(1), General Duty, what are the chemicals that are covered?

**Answer:** There is no specific list of substances which subject a stationary source owner or operator to the general duty provisions. The general duty provisions apply to owners and operators of all stationary sources which have any "extremely hazardous substances". Extremely hazardous substances are not limited to the list of regulated substances listed under section 112(r), nor the extremely hazardous substances under EPCRA §302 (40 CFR Part 355, Appendices A and B). Although there is no definition for extremely hazardous, the Senate Report on the Clean Air Act provides criteria EPA may use to determine if a substance is extremely hazardous. The report expressed the intent that the term "extremely hazardous substance" would include

any agent "which may or may not be listed or otherwise identified by any Government agency which may as the result of short-term exposures associated with releases to the air cause death, injury or property damage due to its toxicity, reactivity, flammability, volatility, or corrosivity" (Senate Committee on Environment and Public Works, Clean Air Act Amendments of 1989, Senate Report No. 228, 101st Congress, 1st Session 211 (1989) - "Senate Report"). As the Senate makes clear, "the release of any substance which causes death or serious injury because of its acute toxic effect or as a result of an explosion or fire or which causes substantial property damage by blast, fire, corrosion or other reaction would create a presumption that such substance is extremely hazardous." Senate Report at 211. Revisions to the list of regulated substances under CAA 112(r) do not affect the applicability of the general duty provisions. (CAA Q&A Database).

**Question:** Does the exemption at 40 CFR 68.125 for "ammonia used as an agricultural nutrient, when held by farmers" apply to the CAA Section 112(r)(1) general duty clause?

**Answer:** No. The exemption for ammonia held by farmers for use as fertilizer applies only to the provisions of the risk management program regulations at 40 CFR Part 68. The general duty requirement is statutory rather than regulatory and is, therefore, not subject to the regulatory exemption at 40 CFR 68.125. (CAA Q&A Database).

## Safety Advisory

# Chlorine Transfer Hose Failure

**Chlorine handlers using nonmetallic-lined chlorine transfer hoses should ensure that these hoses are constructed with the appropriate structural braiding layer, either PVDF monofilament material or Hastelloy C-276.**

The U.S. Chemical Safety and Hazard Investigation Board (CSB) issued this Safety Advisory to inform users of chlorine of the importance of using chlorine transfer hoses (CTH) with the proper material of

construction and of the need for end user positive identification of hoses. This Advisory is a product of the investigation of the chlorine release at DPC Enterprises in Festus, Missouri.

CTHs with a nonmetallic inner core such as Teflon are more tolerant of moisture. However, this inner core is subject to permeation by chlorine molecules. The Chlorine Institute recommends that hoses constructed with such an inner lining "have a structural layer braid of polyvinylidene fluoride (PVDF) monofilament material or a structural braid of Hastelloy C-276. If the braid is not composed of the recommended material, permeating chlorine molecules could potentially attack the braid layer and weaken the structural integrity of the hose.

## The Incident

In 2002, a 1-inch CTH used in a railcar offloading operation at DPC Enterprises in Festus, Missouri, catastrophically ruptured and initiated a sequence of events that led to the release of 48,000 pounds of chlorine into neighboring areas. Investigators determined that the ruptured hose was not constructed of the correct materials for chlorine service. The hose that DPC workers installed actually had a stainless steel braiding, which is easily corroded and weakened by chlorine. The hose lasted only 59 days before bursting under pressure.



An incorrect transfer hose ruptured at DPC Enterprises, leaking 48,000 pounds of chlorine.

DPC corporate headquarters ordered the CTHs from a hose distributor. Shipping documentation indicated that the CTHs were constructed of a convoluted Teflon-inner liner and Hastelloy C-276 structural braid layer. DPC has no testing capabilities to verify materials of construction; they

depend on documentation from the distributor. The ruptured hose was tested after the incident. Test results indicated that the hose was constructed of a 316 L stainless-steel structural braid layer, and thus did not follow Chlorine Institute recommendations for nonmetallic-lined hoses.

Please notify CSB as soon as possible if your facility determines that a chlorine transfer hose has been misidentified or if you have experienced chlorine transfer hose failures due to incorrect hose material of construction. Contact CSB at (202) 261-7600 Monday – Friday, 9:00 a.m. to 5 p.m. EST.

CSB is an independent Federal agency established by the Clean Air Act Amendments of 1990, CSB is responsible for determining the root and contributing causes of accidents, issuing safety recommendations, studying chemical safety issues, and evaluating the effectiveness of other government agencies involved in chemical safety.

**Approximately 12 million tons of chlorine are manufactured in the United States each year. When inhaled in high concentrations — 1,000 parts of chlorine per million parts of air (ppm) — chlorine gas is fatal after a few minutes. Breathing 430 ppm is fatal after 30 minutes; even concentrations as low as 10 parts per million are classified as IDLH, or “immediately dangerous to life or health,” according to federal guidelines. Chlorine also causes skin burns.**

## THE DANGERS OF CHLORINE



### Chlorine Gas Release

**Incident Description:** On July 20, 2003, there was a release of chlorine gas from the Honeywell refrigerant manufacturing plant in Baton Rouge, Louisiana. The accident resulted in the hospitalization of four plant workers and required residents within a half-mile radius to shelter in their homes. Investigators determined that common deficiencies include the following management systems: Hazard analyses did not ensure a review of all equipment, procedures, and likely scenarios; Non routine situations were not always recognized and reviewed to ensure that work could proceed safely; Work practices at the plant did not always strictly follow written operating procedures.



Photos show equipment involved in the chlorine gas release at the Honeywell Baton Rouge refrigerant plant.

### Acetylene Gas Release and Explosion

**Incident Description:** On January 25, 2005, a gas explosion killed three workers at the Acetylene Service Company plant in Perth Amboy, NJ. The blast originated in a wooden shed located near six large storage tanks that received liquid waste from the plant's acetylene generating system. The plant produces, repackages, and distributes acetylene used in welding. Lessons learned include the need to ensure that buildings or enclosures that could potentially contain acetylene are suitable for acetylene service, maintain check valves and block valves in good working order through periodic inspections and tests, and provide an engineered, positive means of isolation in addition to check valves.



Building shows damage following fatal acetylene gas explosion in an exterior wooden shed.

### Aqueous Ammonia Release

**Incident Description:** On April 11, 2003, one worker was killed at the D.D. Williamson food additive plant in Louisville, Kentucky, when a process vessel became overpressurized and failed catastrophically. The failure caused a release of aqueous ammonia as well as extensive damage to the plant, which manufactures caramel coloring. Investigators found that the company did not have programs in place to determine whether equipment and processes met basic engineering requirements. They also had inadequate hazard analysis systems, and did not have effective training programs to ensure operators knew the potential equipment hazards and how to respond in the case of an equipment failure.



Wrecked equipment after a catastrophic vessel failure at D.D. Williamson food color plant

### Flammable Hydrocarbons Release, Explosion and Fire

**Incident Description:** On April 8, 2004, four workers were seriously injured when highly flammable hydrocarbon components were released and ignited at the Giant Industries Ciniza refinery, Gallup, New Mexico. Damaged to the unit was in excess of \$13 million. The release occurred as maintenance workers were removing a malfunctioning pump from the refinery's hydrofluoric acid (HF) alkylation unit. Unknown to personnel, a shut-off valve connecting the pump to a distillation column was apparently in the open position, leading to the release and subsequent explosions. Lessons learned include the need of management of change analyses for any valve modifications; effective "lock out tag out" programs to ensure equipment has been isolated, depressurized, and drained; and proper mechanical integrity programs to prevent breakdown maintenance.



Explosions and fire damage the alkylation unit at the Giant Industries gasoline refinery.

---

Notice: This newsletter provides information on the Risk Management Program and other issues relating to the Accidental Release Prevention Requirements of the Clean Air Act. The information should be used as a reference tool, not as a definitive source of compliance information. Compliance regulations for CAA section 112(r) are published in 40 CFR Part 68.

---